

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-30 (canceled).

31. (previously presented) A method of selectively and sequentially dispensing a plurality of reagent solutions to a plurality of vials divided into a first bank of vials and a second bank of vials and selectively purging material from the first bank of vials and the second bank of vials, comprising:

- a. providing a multi-well synthesizer including a controller, a plurality of vials divided into a first bank of vials and a second bank of vials, a plurality of valves for delivering reagent solutions to selective vials, a first drain corresponding to the first bank of vials, a second drain corresponding to the second bank of vials and a waste tube;
- b. dispensing one or more of the plurality of reagent solutions through a selective one of the plurality of valves to a selective one or more of the plurality of vials, to perform synthesis within the selective one or more of the plurality of vials;
- c. coupling a waste tube to a selective one of the first drain and the second drain within a purging system by moving the waste tube to the selective one of the first drain and the second drain until the waste tube is coupled with the selective one of the first drain and the second drain; and
- d. purging material from the selected one of the first bank of vials and the second bank of vials through the purging system.

32. (previously presented) The method according to claim 31 wherein dispensing is performed in a parallel fashion when one of the plurality of reagent solutions is dispensed into more than one of the plurality of vials.

33. (previously presented) The method according to claim 31 wherein during dispensing one or more of the plurality of reagent solutions are dispensed into one or more of the plurality of vials in a serial fashion.

34. (currently amended) A method of selectively and sequentially dispensing a plurality of reagent solutions to a first vial and a second vial and selectively purging material from a selective one of a the first vial and a the second vial in which synthesis is taking place comprising:

- a. providing a multi-well rotary synthesizer including a controller, a first vial, a second vial, a plurality of valves for delivering reagent solutions to a selective one of the first vial and the second vial, a first drain corresponding to the first vial, a second drain corresponding to the second vial and a waste tube;
- b. dispensing one or more of the plurality of reagent solutions through a selective one of the plurality of valves to a selective one or more of the first vial and the second vial, to perform synthesis within the selective one or more of the first vial and the second vial;
- ~~c.~~ coupling a selective one of the first drain and the second drain with the waste tube by moving the selective one of the first drain and the second drain to the waste tube until the selective one of the first drain and the second drain is coupled with the waste tube;
- ~~d. e.~~ forming a pressure differential between an interior and an exterior of the selective one of the first vial and the second vial, thereby expelling material from the selective one of the first vial and the second vial through the waste tube; and
- ~~e. d.~~ uncoupling the selective one of the first drain and the second drain from the waste tube after the material has been purged.

35. (previously presented) The method according to claim 31 wherein purging material includes generating a pressure differential within the selective one of the first bank of vials and the second bank of vials.

36. (canceled)

37. (previously presented) The method according to claim 31 further comprising forming a pressure differential between an interior and an exterior of the selective one of the first bank of vials and the second bank of vials, thereby expelling material from the selective one of the first bank of vials and the second bank of vials through the waste tube.

38. (previously presented) The method according to claim 31 further comprising uncoupling the waste tube from the selective one of the first drain and the second drain after the material has been purged.

39. (previously presented) A method of selectively and sequentially dispensing a plurality of reagent solutions to a plurality of vials divided into a first bank of vials and a second bank of vials and selectively purging material from the first bank of vials and the second bank of vials, comprising:

- a. providing a multi-well synthesizer including a controller, a plurality of vials divided into a first bank of vials and a second bank of vials, a plurality of valves for delivering reagent solutions to selective vials, a first drain corresponding to the first bank of vials, a second drain corresponding to the second bank of vials and a waste tube;
- b. dispensing one or more of the plurality of reagent solutions to a selective one or more of the plurality of vials, to perform synthesis within the selective one or more of the plurality of vials;
- c. coupling a selective one of the first drain and the second drain with the waste tube by moving the selective one of the first drain and the second drain to the waste tube until the selective one of the first drain and the second drain is coupled with the waste tube; and
- d. purging material from the selected one of the first bank of vials and the second bank of vials.

40. (previously presented) The method according to claim 39 wherein dispensing is performed in a parallel fashion when one of the plurality of reagent solutions is dispensed into more than one of the plurality of vials.

41. (previously presented) The method according to claim 39 wherein during dispensing, one or more of the plurality of reagent solutions are dispensed into one or more of the plurality of vials in a serial fashion.

42. (currently amended) A method of selectively and sequentially dispensing a plurality of reagent solutions to a first vial and a second vial and selectively purging material from a selective one of a the first vial and a the second vial in which synthesis is taking place comprising:

- a. providing a multi-well rotary synthesizer including a controller, a first vial, a second vial, a plurality of valves for delivering reagent solutions to a selective one of the first vial and the second vial, a first drain corresponding to the first vial, a second drain corresponding to the second vial and a waste tube;
- b. dispensing one or more of the plurality of reagent solutions through a selective one of the plurality of valves to a selective one or more of the first vial and the second vial, to perform synthesis within the selective one or more of the first vial and the second vial;
- c. coupling the waste tube to a selective one of the first drain and the second drain by moving the waste tube to the selective one of the first drain and the second drain until the waste tube is coupled with the selective one of the first drain and the second drain; and
- d. ~~c.~~ forming a pressure differential between an interior and an exterior of the selective one of the first vial and the second vial, thereby expelling material from the selective one of the first vial and the second vial through the waste tube.

43. (previously presented) The method according to claim 42 further comprising uncoupling the waste tube from the selective one of the first drain and the second drain after the material has been purged.

44. (canceled)

45. (previously presented) The method according to claim 31 further comprising uncoupling the waste tube from the selective one of the first drain and the second drain.

46. (currently amended) A method of selectively and sequentially dispensing a plurality of reagent solutions to a first vial and a second vial and selectively purging material from a selective one of ~~a~~ the first vial and ~~a~~ the second vial in which synthesis is taking place comprising:

- a. providing a multi-well rotary synthesizer including a controller, a first vial, a second vial, a plurality of valves for delivering reagent solutions to a selective one of the first vial and the second vial, a first drain corresponding to the first vial, a second drain corresponding to the second vial and a waste tube;
- b. dispensing one or more of the plurality of reagent solutions through a selective one of the plurality of valves to a selective one or more of the first vial and the second vial, to perform synthesis within the selective one or more of the first vial and the second vial;
- c. coupling a selective one of the first drain and the second drain with the waste tube by moving the selective one of the first drain and the second drain to the waste tube until the selective one of the first drain and the second drain is coupled with the waste tube; and
- ~~d.~~ e. forming a pressure differential between an interior and an exterior of the selective one of the first vial and the second vial, thereby expelling material from the selective one of the first vial and the second vial through the waste tube.

47. (currently amended) A method of selectively and sequentially dispensing a plurality of reagent solutions to a first vial and a second vial and selectively purging material from a selective one of ~~a~~ the first vial and ~~a~~ the second vial in which synthesis is taking place comprising:

- a. providing a multi-well rotary synthesizer including a controller, a first vial, a second vial, a plurality of valves for delivering reagent solutions to a selective one of the first vial and the second vial, a first drain corresponding to the first vial, a second drain corresponding to the second vial and a waste tube;
- b. dispensing one or more of the plurality of reagent solutions through a selective one of the plurality of valves to a selective one or more of the first vial and the second vial, to perform synthesis within the selective one or more of the first vial and the second vial;

- c. coupling the waste tube with a selective one of the first drain and the second drain by moving the waste tube to the selective one of the first drain and the second drain until the waste tube is coupled with the selective one of the first drain and the second drain;
- d. e. forming a pressure differential between an interior and an exterior of the selective one of the first vial and the second vial, thereby expelling material from the selective one of the first vial and the second vial through the waste tube; and
- e. d. uncoupling the waste tube from the selective one of the first drain and the second drain after the material has been purged.

48. (currently amended) A method of selectively and sequentially dispensing a plurality of reagent solutions to a first vial and a second vial and selectively purging material from a selective one of a the first vial and a the second vial in which synthesis is taking place comprising:

- a. providing a multi-well rotary synthesizer including a controller, a first vial, a second vial, a plurality of valves for delivering reagent solutions to a selective one of the first vial and the second vial, a first drain corresponding to the first vial, a second drain corresponding to the second vial and a waste tube;
- b. dispensing one or more of the plurality of reagent solutions through a selective one of the plurality of valves to a selective one or more of the first vial and the second vial, to perform synthesis within the selective one or more of the first vial and the second vial;
- c. coupling the waste tube with a selective one of the first drain and the second drain by moving the waste tube to the selective one of the first drain and the second drain until the waste tube is coupled with the selective one of the first drain and the second drain; and
- d. e. purging material from the selective one of the first vial and the second vial through the waste tube.

49. (currently amended) A method of selectively and sequentially dispensing a plurality of reagent solutions to a first vial and a second vial and selectively purging material from a selective one of a the first vial and a the second vial in which synthesis is taking place comprising:

- a. providing a multi-well rotary synthesizer including a controller, a first vial, a second vial, a plurality of valves for delivering reagent solutions to a selective one of the first vial and the second vial, a first drain corresponding to the first vial, a second drain corresponding to the second vial and a waste tube;
- b. dispensing one or more of the plurality of reagent solutions through a selective one of the plurality of valves to a selective one or more of the first vial and the second vial, to perform synthesis within the selective one or more of the first vial and the second vial;
- c. coupling a selective one of the first drain and the second drain with the waste tube by moving the selective one of the first drain and the second drain to the waste tube until the selective one of the first drain and the second drain is coupled with the waste tube; and
- d. ~~c.~~ purging material from the selective one of the first vial and the second vial through the waste tube.